COMMENTARY

Implementing the Pharmacists' Patient Care Process at a Public Pharmacy School

Janet Cooley, PharmD, Jeannie Lee, PharmD

University of Arizona College of Pharmacy, Tucson, Arizona

The Joint Commission of Pharmacy Practitioners has provided the profession of pharmacy a patient-centered care model known as the Pharmacists' Patient Care Process (PPCP). This process will serve to provide consistency throughout the profession as it becomes incorporated throughout pharmacy practice and education. A description of the early stages of implementing the PPCP at one public college of pharmacy provides insights into opportunities for education and assessment.

Keywords: pharmacists' patient care process

BACKGROUND

The Joint Commission of Pharmacy Practitioners (JCPP) created a profession-wide patient-centered care model known as the Pharmacists' Patient Care Process (PPCP) in 2014.[1] The JCPP's model points to what pharmacists have been doing for many years and looks at the future of pharmacy care and the pharmacist's role within health care teams. The JCPP report recognized variations within the profession of pharmacy with the way in which the patient care process has been labeled, taught and delivered. The goal of the PPCP model is to function as a framework around which the profession can assemble, regardless of practice setting or type of patients served. The JCPP also reported that they believed a consistent patient care process will help "Patients achieve optimal health and medication outcomes with pharmacists as essential and accountable providers within patient-centered, team-based health care."[2]

The PPCP model is an appropriate response to the American Colleges of Clinical Pharmacy (ACCP) White Paper calling for "clinical pharmacy. . .[to] adopt a single, consistent direct patient care process" to be recognized as medication experts among health care professionals and patients.[3] Additionally, the Accreditation Council of Pharmacy Education (ACPE) recognized the value of this uniform process in the creation of Standard 10.8 within the Standards 2016 document.[4] Standard 10.8 ensures that the curricula of colleges and schools of pharmacy "prepares students to provide patient-centered collaborative care as described in the PPCP model endorsed by the JCPP."[4] With this standard in place, doctor of pharmacy (PharmD) programs nationwide must now develop a plan to teach the PPCP and assess its implementation in their curricula.

The PPCP recommends that pharmacists use a patient-centered approach, in collaboration with other health care providers to optimize patient care. To accomplish this, pharmacists should use evidence-based medicine to collect necessary subjective and objective information, assess the collected information, develop an individualized patient-centered plan, implement the plan, monitor and evaluate the effectiveness of the plan – modifying as needed.[5] The JCPP has provided the profession a tangible process that can clearly be applied to all facets of pharmacy practice from medication therapy management (MTM) and collaborative drug therapy management (CDTM) services to chronic disease management and acute patient care. The clarity and simplicity of the PCPP model makes it an ideal umbrella to cover all aspects of pharmacy practice. Consequently, the PPCP can be taught within the many aspects of a pharmacy curriculum that focus on patient care and should be incorporated throughout pharmacy curricula as a guiding framework for PharmD students. One example in the literature has demonstrated that students show improvement in identifying actual and potential drug problems after participating in a course that intentionally focuses on the PPCP components.[6]

It is the consistency, clarity and simplicity of the PPCP that should provide a benefit to pharmacy education and practice as all pharmacists move toward using the same language and processes for patient care. The intent of this article is to describe how one public college of pharmacy has looked at the teaching of current patient

Corresponding Author: Janet Cooley, University of Arizona College of Pharmacy, 1295 N. Martin, PO Box 210212, Tucson, AZ 85721. Tel: 520-626-5095. Fax: 520-626-4063. E-mail: cooley@pharmacy.arizona.edu

care processes as related to the new PPCP model, and begun to implement the ACPE Standard 10.8 within the pharmacy curriculum.

Applying PPCP in Teaching

Though many pharmacists and pharmacy educators have been using some iteration of the PPCP model in their patient care, there has not been profession-wide consistency in how to describe or teach this process.

It is possible that pharmacy schools looking to meet the ACPE standards by incorporating the PPCP may do so by teaching it as a process when SOAP note or other patient care encounter documentation is taught and used throughout the curriculum in classroom and experiential settings. A recent example of this is Rivkin's article, wherein she described an approach to incorporating the PPCP into a first-year integrated pharmacotherapy course.[6] Historically, a few different patient care models, such as Hepler and Strand's pharmaceutical care model, and more recently the MTM process and CDTM model, have been taught in many pharmacy schools.[7] Likewise, pharmacy schools and educators use various models to teach documentation of patient encounters, most often using the SOAP (Subjective, Objective, Assessment, Plan) structure, but in other cases TITRS (Title, Introduction, Text, Recommendation, Signature) and FARM (Findings, Assessment, Recommendations or Resolutions, Management).[8] Documentation of patient encounters using a standardized process such as a SOAP note (a critical interprofessional communication tool in the era of electronic health records), is generally considered an essential competency for pharmacists and students.[9,10] This manuscript proposes that this portion of the pharmacy curricula will be one of the easiest places to begin integration of teaching the PPCP.

In reviewing the PPCP, it is apparent that the documentation strategies taught and often used to assess student competencies, such as SOAP and FARM, are closely related to the newly modeled process. Figure 1 shows how both the SOAP and FARM documentation strategies intuitively match the PPCP model (Note: SOAP is included as it is generally accepted as the primary form of documentation and FARM closely follows the SOAP logic; TITRS is not included in this figure as it is not as widely used among pharmacy schools). The figure illustrates that the new PPCP is not a reinvention, but rather a broader, overarching model for pharmacists' patient-centered care that current teaching strategies fit nicely within. Therefore, the patient encounter documentation strategies already being taught and used to assess student competence within the pharmacy curricula can reinforce the PPCP model for pharmacist-provided patient care services. As
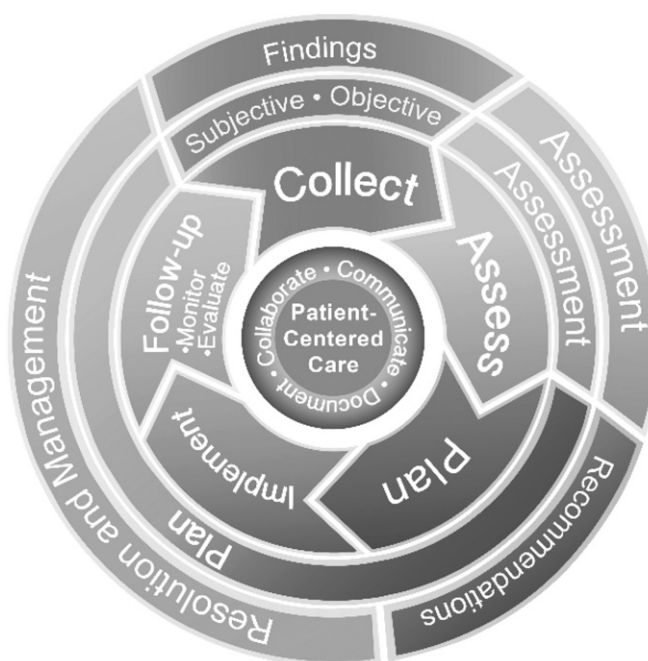

Figure 1. Depiction of the Pharmacists' Patient Care Process (center circle and inner most ring) Alignment with SOAP (middle ring) and FARM (outer ring)[8].

seen in Figure 1, the PPCP model includes five steps that align well with the SOAP note documentation process: collect subjective and objective information about a patient (S&O); assess the information collected (A); develop an individualized plan (P); implement the plan (P); and monitor and evaluate the patient through follow-up (P). As students learn the PPCP model and the steps in the process become second-nature to their patient care approach, presumably their patient encounter documentation skills will improve.

As mentioned at the American Association of Colleges of Pharmacy (AACP) Annual Meetings in 2016 and 2017 and presented by the Council of Faculties Annual Report, it will be critical for faculty to consistently use the same language when incorporating the PPCP model in their teaching.[11] As the teaching faculty and experiential preceptors adapt student activities to teach and assess competencies based on the PPCP model, patient interactions along with incorporation of SOAP note documentation can directly refer to the PPCP and use the process at every opportunity.

At the University of Arizona College of Pharmacy (UACOP), the PPCP model has become a common thread beginning with the Class of 2020. The students in this cohort were introduced to the PPCP model on their first day of school during orientation in an innovative Curriculum Orientation session. In this session, students witnessed a simulated patient encounter conducted by

a fourth-year student including a patient and provider interaction, therapeutic decision making, and development of a patient care plan. The components of the patient encounter were tied to the PPCP model to relay how the curriculum will equip students to become competent in the process. Afterward, the students learned about the knowledge and skills they would gain from the courses within the curriculum, and how each course builds upon previous courses to help them develop into a pharmacist who can use the PPCP to care for diverse patients within diverse health care teams. The curriculum orientation containing the PPCP introduction will be consistently reinforced by course coordinators and instructors throughout the curriculum as a thread in various courses such as Communication Skills and Human Behavior, Introductory Pharmacy Practice Experience (IPPE): Perspectives in Aging, the Pharmacotherapeutics series, and Advanced Patient Care (the capstone course). Figure 2 offers an example of how the PPCP can be intentionally addressed and assessed within a sample pharmacotherapeutics topic. This example highlights how students could be taught content in a case-based approach that emphasizes the PPCP using a "flipped classroom" approach.[12] Finally, students will be able to practice delivering patient-centered care using the PPCP during their experiential rotations. Thus, one strategy for integrating the PPCP model into the curriculum is to reinforce the overarching process every time the student is given the opportunity to simulate or conduct a patient interaction and document the encounter using a SOAP note. We hope to have a majority of faculty who teach in the PharmD curriculum highlight to students how the information they teach will help students achieve competencies linked to proficiently implementing the PPCP model.

At the UACOP, we realized that education of the faculty, both basic science and clinical, is key for this plan to be successful. The faculty training started in a passive manner through emails to all faculty informing them of the ACPE 2016 Standards, including the PPCP implementation. However, while preparing for the college's reaccreditation through drafting and reviewing of the self-study materials, faculty education on PPCP was heightened. Much of this was driven by the college administration, who provided consistent messaging and language around the PPCP. For example, to increase understanding of the PPCP by basic science faculty, the curriculum committee chair (a clinical faculty member) was invited to the department of pharmacology and toxicology faculty meeting to explain the PPCP model and how our curriculum supports student competency of the model. This information sharing between the science and clinical faculty has become key to all curricular innovations, including the addition of the PPCP thread. The PPCP model was specifically highlighted during an all-faculty retreat in December 2015 and in August 2016 surrounding the ACPE Self-Study preparation. The PPCP model was included in a session as part of the curriculum update in the college's strategic planning retreat involving all faculty in December 2016. In addition, as we plan for a curriculum transformation, the PPCP will become more explicitly integrated throughout courses, especially the pharmacotherapeutics course series and the capstone course. As a start, several faculty members, both clinical practitioners and basic scientists, were involved in creating and implementing the Curriculum Orientation, described above, that introduced the PPCP model to the new students as one of the pillars of our curriculum.

To set the stage, this is an example from pharmacotherapeutics dermatology lecture class that is taught in a "Flipped Classroom" style, ie, students are provided the learning content as reading material before class and class time is spent working through patient cases as a group (versus delivering content in class time and having the students work through cases on their own time).[12] The following is an amalgamation of an example in-class case.

CR, 26-year-old female, 5'4'' and 175lbs, with DM and moderate acne

Collect	What other information would you like to ask Ms. CR or know about her?
Assess	What is your assessment?
Plan	What would you recommend for treatment and why?
	What non-pharmacological recommendations do you have?
	Why don't we use Minocycline alone?
Implement	What are some counseling points on why her old regimen wasn't working.
	What are your counseling points for Differin?
Follow Up	What are the patient's therapeutic goals?
	How will you determine if the patient has made progress toward her therapeutic goals?

SP, 19-year-old female with silver plaques on her knees

Collect	What other information would you like to ask Ms. SP or know about her?
Assess	What is your assessment and why?
Plan	What would you recommend for treatment? Include counseling on why her old regimen wasn't working.
	What non-pharmacological recommendations do you have?
	How much [clobetasol] does she need for a month and what are the instructions?
Implement	What counseling points do you have for Ms. SP?
Follow Up	What are the patient's therapeutic goals?
	How will you determine if the patient has made progress toward her therapeutic goals?

Figure 2. Example of Pharmacists' Patient Care Process (PPCP) in Teaching.

Additionally, ACPE Standards 2016 highlighted the importance of intentionally planned and assessed co-curricular activities for the first time.[4] This is an area closely related to student learning outside the classroom and experiential settings, and one that should be intentionally linked with same competency goals. Therefore, student learning of the PPCP should also extend to the co-curricular activities in pharmacy curricula, particularly for patient care-related activities. Learning and assessment of co-curricular activities may focus on health screenings and education offered by student pharmacists to the public, where each training highlights the involved PPCP steps being learned and implemented. For instance, an immunization training may start with how to conduct a patient interview, move to gathering needed objective information, such as documented patient allergies, then assessing the correct vaccines needed by patient, providing the vaccines, and end with documentation of the vaccines given to the patient and monitoring planned, covering all of the steps in the PPCP model.

Applying PPCP in Assessment

As teaching the PPCP is incorporated into patient care activities that culminate in SOAP note documentations, assessment rubrics may be developed and used to check student competencies. The SOAP note can serve as one of the key assessment tools to determine if students are successfully grasping the PPCP steps. In addition, the PPCP-based rubrics can be incorporated into patient simulations such as objective structured clinical exams (OSCEs), clinical skills assessments (CSAs), and experiential education activities (to be discussed further later). For example, in the capstone course (Advanced Patient Care) at the UACOP, three OSCEs are conducted to assess student competence in applying acquired clinical knowledge and skills to simulated patient encounters.[13] A rubric is used for preceptors to assess patient interview, case presentation to the preceptor, and patient education by students. The end product of the OSCE is a SOAP note, which is self-graded by each student using a SOAP note key and subsequently evaluated by course coordinators. We plan to tie these activities explicitly to obtaining PPCP competencies for students starting in the spring of 2018. An example of how the patient encounter and SOAP note rubrics used for OSCEs in the capstone course can reflect the PPCP include the following: in the pre-visit work-up using patient case and during the patient interview, it will be critical that students "collect" the appropriate information; in the clinical decision making and case presentation to the preceptor, students must appropriately "assess" the patient using information from case, interview and clinical tools to develop an optimal care plan; and as students return to the patient to provide education, they will focus on "implementation and follow-up." Both the patient encounter rubric and SOAP note self-grading rubric will be mapped to PPCP for student and preceptor recognition and use of the process. Finally, designing exam questions to reinforce the language used within the PPCP will provide added consistency and credence to the process. Through the use of examination software (eg, ExamSoft, Dallas, TX), it will also be possible for exam creators to code exam items to the steps within the PPCP model to ensure competencies are obtained. Such a strategy can provide data at two levels: individually, students will be able to identify the steps within the PPCP that are most challenging for them; globally, schools will be able to assess and identify areas within the curriculum that could be reemphasized or intentionally repeated to solidify competence in the PPCP.

Future work will include assessment strategies for implementation of the PPCP on a college-wide level, such as the possible development of a curriculum content map that highlights areas where the PPCP and its components are taught or could be taught. Additionally, reflection and review as part of the ACPE annual report and regular self-study will include the PPCP.

Applying PPCP in Experiential Education

It is important to acknowledge that preceptors and rotation sites will be at varying levels of implementation of the PPCP when training PharmD students. We will also need to be flexible with preceptors and practitioners in this time of transition to teaching the PPCP. We must anticipate that students may arrive at their introductory and advanced pharmacy practice sites and find that this process and the language surrounding the PPCP will not be fully integrated in particular settings. While the PPCP is intuitive and reflective of pharmacy practice in general, students may have a chance to influence pharmacy practice by introducing the PPCP model to their experiential rotation experience and preceptors. For example, a PPCP-based checklist may be provided to the preceptors and students on clinical rotations to be used as a discussion guide when presenting patient cases. Perhaps the checklist can also be used in high-volume community or inpatient pharmacy rotations as a process guide for students to learn the pharmacist workflow of medication preparation, dispensing, education and monitoring. Such use may spur opportunities for further conversations around the PPCP and promote a consistent use of the terminology. Nationwide, the PPCP adoption by every practicing and teaching pharmacist at all patient care settings may be a slow process, but student pharmacists can help facilitate the progress.

It will be critical to ensure that students are equipped to be adaptable to rotation sites when the sites do not use the same process they have been trained with. As the PPCP model helps to provide the pharmacy profession with clarity and consistency, our students need to be trained as leaders who may be the first generation of pharmacists to fully adapt this process into their daily practice.

Educating preceptors about the PPCP and how they can implement the model in their practice and teaching is also a valuable opportunity in preceptor development for experiential education offices at schools and colleges of pharmacy. The UACOP has taken the first steps to including the PPCP in preceptor orientation, by including it in a new "Preceptor Orientation Video." The PPCP model is then more fully introduced to the preceptors during individual site visits. Future plans include more extensive preceptor education in the form of an interactive workshop to help preceptors understand the "Why, What and How" of the PPCP, along with the development of materials such as a PPCP discussion guide for student/resident teaching and continuing education program on this topic.

Future plans for the UACOP include adapting specific evaluation statements to assess the PPCP competencies and incorporating them into both the preceptor evaluation of students and student evaluation of preceptors and rotation experiences to help target training on the PPCP.

Opportunities for Scholarship of Teaching and Learning With the PPCP

As the profession devotes energy to the implementation of the PPCP, it is critical that educators and practitioners are mindful of the vast opportunities for scholarship to share their experiences and lessons learned. Programs should design meaningful assessment plans when implementing the PPCP into their curricular revisions and transformations, and present and publish the findings for others to learn from and incorporate. In particular, course-specific teaching approaches to the PPCP implementation would be valuable as programs begin to look for ways to weave this process into courses that may not have obvious adaptations, such as basic science, management and research courses. Additionally, it will be useful to see examples of how pharmacy schools map their curriculum and assessment measures to PPCP. Finally, development of validated instruments to measure student competence in the PPCP will facilitate tracking of student learning and lead to innovations for better teaching the process in pharmacy curricula.

As stated earlier, the consistency, clarity and simplicity of the PPCP model are beneficial to pharmacy education and practice. While there may be barriers and resistance to change, the dissemination of research around the implementation and assessment of the PPCP will help to promote its adaptation.

CONCLUSION

The Pharmacists' Patient Care Process (PPCP) offers the profession of pharmacy a consistent framework for patient care. Incorporation into pharmacy education is critical to implementation and full execution. The PPCP fits well within existing educational components of the required pharmacy curriculum including didactic and experiential education and assessment.

As we adopt the PPCP model, it is important that we help students, educators and practitioners understand how this model fits within existing processes. Doing so will likely facilitate acceptance of the new model and help pharmacy programs nationwide adopt the new standard patient care process. As Bennett and Kliethermes state, "widespread adoption. . .will advance the contribution by pharmacy practice to meeting the goal of high-quality, cost-effective and accessible health care for all patients."[5]

REFERENCES

1. Joint Commission of Pharmacy Practitioners. Pharmacists' patient care process. http://www.pharmacist.com/sites/default/files/files/PatientCareProcess.pdf. Published May 29, 2014. Accessed May 18, 2017.
2. Joint Commission of Pharmacy Practitioners: Pharmacists' patient care process presentation. http://jcpp.net/wp-content/uploads/2015/09/Patient_Care_Process_Template_Presentation-Final.pdf. Accessed May 18, 2017.
3. Harris IM, Phillips B, Boyce E, et al. Clinical pharmacy should adopt a consistent process of direct patient care. *Pharmacotherapy.* 2014;34(8):e133-e148.
4. Accreditation Council of Pharmacy Education. Accreditation standards and key elements for the professional program leading to the doctor of pharmacy degree. Standards 2016. https://www.acpe-accredit.org/pdf/Standards2016FINAL.pdf. Accessed May 18, 2017.
5. Bennett MS, Kliethermes MA (Eds). *How to Implement the Pharmacists' Patient Care Process.* Washington, DC: American Pharmacists Association; 2015.
6. Rivkin A. Thinking clinically from the beginning: early introduction of the pharmacists' patient care process. *Am J Pharm Educ.* 2016;80(10):Article 164.
7. Hepler CD, Strand LM. Opportunities and responsibilities in pharmaceutical care. *Am J Hosp Pharm.* 1990;47(3):533-543.
8. Zierler-Brown S, Brown TR, Chen D, Blackburn RW. Clinical documentation for patient care: models, concepts, and liability considerations for pharmacists. *Am J Health Syst Pharm.* 2007;64(17):1851-1858.

9. American College of Clinical Pharmacy. Standards of practice for clinical pharmacists. *Pharmacotherapy* 2014;34(8):794-797.

10. ASHP Council on Professional Affairs. ASHP guidelines on documenting pharmaceutical care in patient medical records. *Am J Health Syst Pharm.* 2003;60(7):705-707.

11. American Association of Colleges of Pharmacy Council of Faculties 2016 proposal. AACP as catalyst for accelerating change in pharmacy education and practice. https://www.aacp.org/sites/ default/files/2017-11/AccelChangeTaskForceReportFINAL.pdf. Published February 2016. Accessed February 9, 2018.

12. Rotellar C, Cain J. Research, perspectives, and recommendations on implementing the flipped classroom. *Am J Pharm Educ.* 2016; 80(2):Article 34.

13. Lee JK, Cooley JH, Tanner NE, Hanauer CN, Schiefer DM, Herrier RN. Development of a pharmacy capstone course from focus groups to advanced patient care. *Am J Pharm Educ.* 2014;78(8):Article 156.